

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Previously Presented): A semiconductor device comprising:

a semiconductor substrate;

an element isolation film formed such as to have a predetermined depth from a main surface of said semiconductor substrate, said element isolation film dividing the area from said main surface to said depth into a plurality of first regions;

first wells formed in said first regions, respectively; and

a second well formed in a second region deeper than each of said first wells in said semiconductor substrate, said second well being in contact with some of said first wells to provide electrical connection therebetween and not being in contact with said first wells adjacent to said some of said first wells,

wherein said first and second wells of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type, and said first wells on the other side are of a second conductivity type, and

wherein said second well is formed only on one side of said second region with  
reference to the predetermined boundary.

Claim 2 (Canceled).

Claim 3 (Withdrawn): A semiconductor device according to claim 2 wherein said second well of said first conductivity type and said second well of said second conductivity type are not in contact with each other.

Claim 4 (Canceled).

Claim 5 (Previously Presented): A semiconductor device according to claim 1 wherein said second well is formed in a memory cell part in said second region.

Claim 6 (Withdrawn): A semiconductor device according to claim 1 wherein said second well is formed only in the vicinity of the bottom of said element isolation film in said second region.

Claim 7 (Withdrawn): A semiconductor device according to claim 1 wherein each impurity concentration of said first and second wells is higher as being closer to a boundary part between said first and second regions.

Claim 8 (Withdrawn): A semiconductor device according to claim 1 further comprising a third well formed in a third region deeper than said second region in said semiconductor substrate.

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Claim 9 (Withdrawn): A method of manufacturing a semiconductor device comprising the steps of:

(a) forming an element isolation film such as to have a predetermined depth from a main surface of a semiconductor substrate, to divide the area from said main surface to said depth into a plurality of first regions; and

(b) forming first wells in said first regions, respectively, and forming a second well making contact with some of said first wells, in a second region deeper than said first wells in said semiconductor substrate.

Claim 10 (Withdrawn): A method according to claim 9 wherein said step (b) comprising the steps of:

(b-1) covering, with a first resist, one side region of said main surface with reference to a predetermined boundary in said semiconductor substrate;

(b-2) implanting impurity of a first conductivity type into said first region by using said first resist as a mask;

(b-3) implanting impurity of the first conductivity type into said second region by using said first resist as a mask;

(b-4) removing said first resist;

(b-5) covering, with a second resist, the other side region of said main surface with reference to said boundary in said semiconductor substrate;

(b-6) implanting impurity of a second conductivity type into said first region by using said second resist as a mask;

(b-7) implanting impurity of the second conductivity type into said second region by using said second resist as a mask; and

(b-8) removing said second resist.

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Claim 11 (Withdrawn): A method according to claim 9 wherein said step (b) comprising the steps of:

(b-1) covering, with a first resist, one side region of said main surface with reference to a predetermined boundary in said semiconductor substrate;

(b-2) implanting impurity of a first conductivity type into said first region by using said first resist as a mask;

(b-3) reforming said first resist such as to be thicker, as a second resist;

(b-4) implanting impurity of the first conductivity type into said second region by using said second resist as a mask;

(b-5) removing said second resist;

(b-6) covering, with a third resist, the other side region of said main surface with reference to said boundary in said semiconductor substrate;

(b-7) implanting impurity of a second conductivity type into said first region by using said third resist as a mask;

(b-8) reforming said third resist such as to be thicker, as a fourth resist;

(b-9) implanting impurity of the second conductivity type into said second region by using said fourth resist as a mask; and

(b-10) removing said fourth resist.

Claim 12 (Withdrawn): A method of manufacturing a semiconductor device comprising the steps of:

(a) forming a trench such as to have a predetermined depth from a main surface of a semiconductor substrate, to divide the area from said main surface to said depth into a plurality of regions in said semiconductor substrate;

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(b) implanting a first impurity from above said main surface into said trench;

and

(c) implanting a second impurity from above said main surface into said regions.

Claims 13-14 (Canceled).

Claim 15 (Previously Presented): A semiconductor device comprising:

a semiconductor substrate;

an element isolation film formed such as to have a predetermined depth from a main surface of said semiconductor substrate, said element isolation film dividing the area from said main surface to said depth into a plurality of first regions;

first wells formed in said first regions, respectively; and

a second well formed in a second region deeper than said first wells in said semiconductor substrate, said second well being in contact with a plurality of said first wells,

wherein said first and second wells of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type, and said first and second wells on the other side are of a second conductivity type, and

wherein the second well on one side of the predetermined boundary has a higher concentration than the first wells on said one side.

Claim 16 (Currently Amended): A semiconductor device comprising:

a semiconductor substrate;

a plurality of element isolation films formed such as to have a predetermined uniform depth from a main surface of said semiconductor substrate, said element isolation films

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dividing the area from said main surface to said depth into a plurality of first regions;

first wells formed in said first regions, respectively; and

a second well formed in a second region deeper than each of said first wells in said semiconductor substrate, said second well being in contact with some of said first wells to provide electrical connection therebetween and not being in contact with said first wells adjacent to said some of said first wells,

wherein said first and second wells of said first and second regions on one side with reference to a predetermined boundary are of a first conductivity type, and said first wells on the other side are of a second conductivity type, ~~and~~

wherein said second well is formed only on one side of said second region with reference to the predetermined boundary, and

wherein the first wells are separated from each other via the element isolation films.

Claims 17-18 (Canceled).

Claim 19 (Previously Presented): A semiconductor device according to claim 16, wherein said second well is formed in a memory cell part in said second region.

Claim 20 (Previously Presented): A semiconductor device according to claim 1 wherein a single element is formed in a single first region.

Claim 21 (Canceled).

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Claim 22 (Previously Presented): A semiconductor device according to claim 15 wherein a single element is formed in a single first region.

Claim 23 (Previously Presented): A semiconductor device according to claim 16 wherein a single element is formed in a single first region.

Claim 24 (Previously Presented): A semiconductor device according to claim 15 wherein the second well is in contact with all of the first wells.